Spinosella velata, sp. n.

Sponge consisting of a number of irregularly cylindrical or compressed tubes, united basally and sometimes laterally. Height 19 cm., breadth 13 cm. Largest tube 4·5 cm. in diameter at top. Tubes provided with broad, horizontal, circular diaphragms, projecting inwards at a short distance below the margin. Outer surface of tubes distinctly spinose.

Main skeleton a network of fairly stout fibre; network usually irregular, sometimes rectangular. Local concentrations of the skeleton network form longitudinal veins, as in *S. sororia*, &c. Fibres about 0·044 millim. thick. Dermal skeleton (on the outside) an irregular reticulation of slender fibre.

Spicules slightly curved, sharp-pointed oxea; size 0·1 by 0·0045 millim., but usually slenderer. Occurring in the fibres and scattered outside.

Bahamas.

The following papers were read:—

1. Report on a Zoological Collection made by the Officers of H.M.S. 'Flying-Fish' at Christmas Island, Indian Ocean. Communicated by Dr. A. Günther, V.P.Z.S., Keeper of the Zoological Department, British Museum.

[Received May 27, 1887.]

(Plates XLI.–XLIV.)

I. Mammalia, by Oldfield Thomas, p. 511.
II. Birds, by R. B. Sharpe, p. 515.
III. Reptiles, by G. A. Boulenger, p. 516.
IV. Mollusks, by E. A. Smith, p. 517.
V. Crustacea, by R. I. Pocock, p. 520.
VI. Coleoptera, by C. O. Waterhouse, p. 520.
VII. Lepidoptera, by A. G. Butler, p. 522.
VIII. Echinodermata, by F. J. Bell, p. 523.
IX. Porifera, by A. Dendy, p. 524.

At the suggestion and through the kind mediation of Capt. Wharton, F.R.S., Hydrographer of the Admiralty, advantage was taken of a recent visit to Christmas Island of H.M.S. 'Flying-Fish,' under the command of Captain Maclear, to make observations on, and collect specimens of, Natural History. This oceanic island is so far out of the usual track of navigation and so unattractive to those interested in commercial pursuits that no naturalist seems to have had an opportunity of visiting it. Even the time and circumstances of its discovery and the man who named it are unknown.

From its geographical position it was not to be expected that its littoral fauna would prove to be in any way differentiated from that of the tropical Indo-Pacific Ocean; but it seemed desirable to pay special attention to any terrestrial animals that might be observed; and

considering the short time at the disposal of the visitors, and the narrow limits of the portion of the island which was accessible to them, the collection is larger than could have been expected.

The best thanks of naturalists are due to Capt. Maclear and the other officers of the ship for having undertaken this task in addition to the primary object of their visit.

Unfortunately one of the most interesting portions of the Collection, viz. the Lepidoptera, was destroyed on its way home, some pieces of camphor having become loose and smashed all the specimens with the exception of two. The remainder of the Collection consisted of 95 specimens, viz. 4 Mammals, 4 Birds, 4 Reptiles, 12 Crustaceans, 4 Arachnids and Myriopods, 27 Insects, 31 Mollusca, 8 Echinoderms, and 1 Sponge. Twelve of the species proved to be undescribed, but at present it would be premature to represent them as isolated forms peculiar to the island, because some of them may yet be found to occur also in some unexplored portion of the Moluccas. The specimens have been deposited in the British Museum, and examined by the staff of the Zoological Department.

I am indebted to Capt. Wharton for the communication of Capt. Maclear's report and for his kind permission to reproduce here the valuable information contained therein. His observations leave no doubt that a rich harvest might be gathered if a collector should be able to make a longer stay and to reach the interior of the island.

Report on Christmas Island. By Captain Maclear, of H.M.S. 'Flying-Fish.'

Observation spot, the middle of the beach, Flying-Fish Cove, about two miles westward of the north point of the island.

Lat. 10° 23′ 19″ S., long. 105° 42′ 52″ E.; dependent on Batavia.

Christmas Island is 190 miles from the nearest point of Java, from which it is separated by a depth of 2450 fms. It is formed of coral-limestone, has no fringing reef, but rises abruptly from the sea in cliffs about 30 feet high, very much underworn, and in many places hollowed out in caverns; the shore is steep; generally a depth of 100 fms. is found at one to two cables from the cliffs.

In appearance it is somewhat saddle-shaped, rising from a long back in the middle, 700 to 800 feet high, to hills at the north-eastern and at the western sides: the western summit is double, and is the best defined mark; its height is 1580 feet. The shape is irregular quadrilateral; it extends through 12′ lat. and about the same in long.

The island is densely wooded all over except where the cliffs are too steep to allow anything to grow. From the northern side the ascent is gradual to the highest parts; but on the southern side, after rising gradually for half a mile from the sea-cliffs, a second wall of limestone cliffs is met, estimated at 200 to 300 feet high; and then slope goes on gently again to the top.

The shore cliffs are almost continuous, making the island inaccessible except at a few places. These cliffs are split by deep fissures, extending several feet below water; where these have become enlarged and the adjacent cliffs have fallen in, a small white beach of fragmentary rock is thrown up, and at such places on the lee side landing can be effected.

From the blown direction of the trees on the south side, and from the weather-worn aspect of rocks exposed to the southward, it is manifest that the south-eastern is by far the most prevailing wind.

The north side of the island forms a large bight in which the water is quite smooth, so that a boat can go close up to the cliffs, but on the southern and eastern sides a heavy sea dashes against the rocks.

The 'Flying-Fish' steamed close round the island looking for anchorage, but found none except in a small cove two miles to the westward of the north point of the island; this has been named 'Flying-Fish' cove; here she anchored in 22 fathoms, with her stern secured by hawser to the trees to prevent her slipping off the bank.

The hill rises nearly perpendicularly at the head of the cove in the form of a horseshoe, and slopes gradually down to the two arms forming the cove. The bare beach is not more than 20 yards wide, and from the look of the fragments that compose it must be thrown up in northerly gales; the upper part of the beach to the foot of the hill, a distance of some hundred yards, is of just the same material, viz. fragments of coral-rock and coral-limestone, but it has a covering of mould from fallen leaves, and is thickly wooded, many of the trees on it being forest trees of 12 feet girth and 300 feet high, apparently hundreds of years of age, showing that a very long time must have elapsed since that beach was raised from the water.

One very large tree had something like the letters WW cut inside a scroll, and nearly illegible from time; this was the only sign of the island having been visited before. One of our officers heard at Batavia that a Dutch vessel was wrecked on the south-east point of the island in a calm about fifteen years ago, and that the crew escaped and lived many months on the island before they were taken off, but I have no other details about the affair.

No running water was seen, but the droppings from the leaves during rain and dew must be great, as holes in the rocks and cup-shaped leaves were filled with water. As it was raining over some part of the island (generally the western) during a great part of the time the 'Flying-Fish' was in the neighbourhood, and clouds were continually being formed over the island from the moist air driven up the side by the south-east wind, a great deal of water must be deposited, and probably be absorbed by the soil. At the eastern end of the cove among the trees, where had seemed at first the most likely place for a water-course, a few volcanic stones were found; but everywhere else the only rock seen was coral-limestone, the cliffs above, from which detached pieces had fallen to the beach, were the same; the soil under the trees was a rich moist mould, apparently formed from decaying vegetation.

Landing was also effected at another small beach in the northern bight near the north-west point; the general features were the same, but there was no anchorage at half a cable from the shore. A few cocks and hens were landed here, but as the crabs immediately began to chase them, I doubt if they will survive and produce.

No large animals were seen nor marks of any. An iguana, said to be four feet in length, was seen in a tree high up, but was not captured. Rat-holes were numerous and one rat was secured, also a large bat; several insects—spiders, flies, beetles and butterflies—were collected; there were sand-flies but no mosquitos. Large crabs were very plentiful, and appeared equally at home running over the sea-cliffs and climbing up the trees; they were very ravenous, pouncing quickly on a dead gannet and devouring other injured crabs, and they must be terrible enemies to the birds generally.

Gannet and Frigate-birds frequent the island, and evidently breed there; but it was not the breeding-season, and very few eggs were found; the young birds were nearly grown. Besides the sea-birds, there was the large green Torres-Strait Pigeon; one was shot with three large red berries in its crop; these pigeons seemed to frequent the higher trees well up the hill; also a Ground-thrush of a sooty-brown colour, just the colour of the fallen leaves, among which it ran nimbly, apparently looking for insects; and a little Flycatcher of the same sombre colour. As evening advanced, a small Swift appeared, which flew about the jungle on the margin of the beach, fly-catching. None of these three last were secured [1]. No bones were found on the beach nor remnants of any animal, not even turtle-remains.

The flora appeared to be the same as that of the neighbouring islands, the Moluccas. As before stated, the island is densely wooded, and many of the trees attain great size. Chief amongst them I recognized two iron-wood trees, one with straight stem and round trunk, and the other with strong buttresses from the roots; both are natives of Celebes. Creepers were as thick as in the Moluccas and covered the top branches of the trees.

Two palms (one I take to be the sago-palm, growing to a great height) and the pandanus were abundant; cocoanut-trees were not seen, though husks were found on the beach apparently washed up from elsewhere. At a small beach on the eastern side there appeared to be banana-trees, but they looked withered and there were no signs of fruit.

No mangroves were seen. The flora of the coast was generally such as is found on all tropical islands.

I regret to say that nearly all the botanical specimens that were collected were destroyed by insufficient drying in the exceedingly damp weather we experienced. (Signed) J. P. Maclear,
Captain.

P.S.—Since writing the above I have learnt that Captain Grenfell, in the 'Amethyst,' in 1857 visited the island, and tried to cut a way to the summit.

[1] A specimen of the Thrush (see p. 515) was fortunately in the collection.—A. G.